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MEMORANDUM FOR DISTRIBUTION

SUBJECT: Department of the Navy Guide for Developing Performance Based Logistics Business Case Analyses (P07-006)

Performance Based Logistics (PBL) Business Case Analyses (BCA) provide an expanded cost/benefit analysis with the intent of determining a best value solution for product support. The PBL BCAs purpose is to provide program managers with an independent method for identifying the alternative that provides optimum support performance within given program constraints. It goes beyond the cost/benefit or traditional economic analysis by linking each alternative to how it fulfills program objectives, complies with support performance measures, and impacts the war fighter.

Inconsistencies in the quality of PBL BCAs together with Government Accountability Office findings that programs need to do a better job of demonstrating that their PBL contracts are achieving expected benefits indicate that further guidance is necessary. The Department of the Navy (DoN) *Guide for Developing Performance Based Logistics Business Case Analyses* is, therefore, provided to support PBL BCA development within all DoN ACAT programs.

This document supplements the DoN PBL Guidance Document dated Jan 27, 2003 that established PBL as the DoN's preferred product support strategy. It provides additional guidance for the conduct and development of PBL BCAs, as well as greater detail regarding the specific considerations that program managers need to ensure are included in the analyses that support PBL decisions. The guide also underscores the requirement for greater communication and cooperation between program logisticians and cost analysts in the development of PBL BCAs. The ASN(RD&A) point of contact for PBL is DASN(A&LM) (703) 697-4063.

A handwritten signature in black ink, reading "Delores M. Etter", is positioned above the printed name.

Delores M. Etter

Attachments: As stated

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# Performance Based Logistics Business Case Analyses



Department of the Navy  
Guide for Developing  
Performance Based Logistics  
Business Case Analyses

November 2007  
(P07-006)

# Foreword

The following are key aspects of Department of the Navy (DoN) Performance Based Logistics (PBL) Business Case Analyses (BCA):

## Independence

In general, PBL BCAs need to be accomplished or directly supervised by government personnel. Program Executive Officers (PEO), Systems Commands (SYSCOM), Direct Reporting Program Managers (DRPM), etc. need to provide sufficient government personnel to support the effective conduct and review of PBL BCAs. It is imperative that cost portions of PBL BCAs for major programs be developed and/or certified by government cost analysis organizations. When contractor support is used, program managers must exercise due diligence regarding the provider's ability to perform and must verify the fidelity of contractor cost/performance data in order to ensure accuracy and to reduce program risk.

## BCA Tailoring/Update

Initial program support strategies for ACAT I programs, including definition of the metrics that will be used to define a program's ability to meet future logistics and operational performance requirements shall be developed prior to Milestone B. These strategies will provide the foundation for detailed BCAs to be completed as required prior to Milestone C and/or contract award that are based on the detailed design. Design maturation is required to support high confidence in alternative estimates. PBL value/net effects assessments need to continue throughout the life cycle with sufficient oversight to ensure reassessment at appropriate trigger points including Independent Logistics Assessments and other key technical reviews.

## Follow-up

Implementation of a PBL BCA alternative requires the ability to track results throughout a program or system's life cycle. Programs need to update their BCA data with actual cost/performance data every three to five years in order to demonstrate how the initiative performed against the projected Net Present Value (NPV) throughout the course of the PBL contract or organic provider agreement. Logistics, maintenance, and cost data as discussed in this guide needs to be collected to serve as the foundation for the future performance assessments and analyses required to support decisions to sustain or enhance the solution, and to refine the cost/benefit estimates. As with the initial BCA, updated cost/performance data from commercial sources needs to be verified by government personnel.

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# **I. INTRODUCTION**

## **A. Purpose.**

References (a) and (b) provide overall Department of the Navy (DoN) guidance and responsibilities for implementation of Performance Based Logistics (PBL) and require use of Business Case Analysis (BCA) to support individual PBL decisions. This guide provides amplifying guidance and information for program managers and cost analysts in the development of PBL BCAs. While as comprehensive as possible the guide cannot anticipate all issues. Program Managers and cost analysts are encouraged to consult with DASN ALM and with their legal counsel concerning particular matters of concern.

The BCA is a tailored process that goes beyond a typical cost/benefit analysis. It assists in refining the myriad decisions that go into determining the best value workload allocation strategy. It includes other quantifiable and non-quantifiable factors, such as cost, performance, producibility, reliability, maintainability, and supportability and is used to fine-tune the PBL strategy to achieve the optimum sustainment approach. The BCA weighs the total costs and total benefits of each support alternative. It documents how each alternative: fulfills the program's strategic objectives, complies with product support performance measures, and impacts the stakeholders.

Completion of a Business Case Analysis Cost Estimate and documentation in a consistent, repeatable format is required. SYSCOMs may prescribe their own tools and formats which should be organized to meet the intent of the minimum or comprehensive requirements contained in reference (b) and this guide, tailored as necessary.

## **B. PBL Definition and Goals**

A PBL Strategy is an agreement in which the logistics support provider (organic, commercial, and/or public/private partnership) is responsible for meeting result-oriented performance requirements in order to improve product support effectiveness while containing or reducing Total Ownership Cost (TOC). PBL is not a 'one size fits all' approach to product support. As with any logistics strategy, PBL must be tailored to fit the individual system/component in its operational environment for the duration of its projected service life.

For legacy Subsystem or Component level PBL strategies, the BCA is a decision support tool used to estimate the costs and to describe the benefits between alternative product support strategies, i.e., traditional or existing vs. proposed alternative(s). It compares the total estimated product support costs between the baseline and PBL strategies to assist in determining the appropriate product support concept required by a Performance Based Agreement (PBA).

For new Acquisition Platform Systems that have little to no 'baseline' cost data, the BCA is more a tool to assess Law, Policy, and Best Value in order to arrive at the optimum support strategy. In either case, program managers are responsible for development of PBL BCAs. A detailed PBL

BCA is required prior to Milestone C, and should be updated to validate the PBL support strategy for follow-on acquisition milestones, and also when significant programmatic or support changes occur.

The overall objectives of PBL are to optimize weapon system readiness and support in a manner that provides a cost effective process that maximizes operational effectiveness, while maintaining clear lines of authority and responsibility. A key part of an effective PBL approach involves establishing clear requirements and associated metrics that may be tracked over time that support the following types of objectives:

1. Maximize Operational Availability
2. Maximize Operational Reliability
3. Reduce/Constrain Cost per Unit Usage
4. Minimize Logistical Footprint
5. Enhance Logistics/Supply Response Time per USC Title 10.

A key component of the PBL definition is to develop a realistic set of objectives that incorporate the trade-offs between these high level objectives. Each objective may be met in a variety of ways. However, all objectives may not be met equally in every case.

### **C. Warfighter Requirements**

In all cases, a success oriented PBL strategy and fielding plan must be consistent with warfighter requirements and the intended usage of the system. The support strategy should correspond to the way in which the objective system is operationally employed. Key areas including strike group or squadron sizing, placement of assets, deployment requirements, surge requirements, and redeployment issues must be considered when developing a PBL for an acquisition program. The warfighter requirement exists in any support environment. Therefore, PBL strategies and objectives must be designed to most effectively and affordably meet that requirement.

### **D. PBL Strategy**

In order to complete a meaningful BCA the PBL approach must be defined in sufficient detail to permit cost/schedule estimation. A basic requirement for conduct of a PBL BCA is that a baseline be established that defines costs over time. Because most of our existing cost history represents non-performance based outcomes the baseline will usually represent a non-performance based result. Baseline estimates must be developed in sufficient detail (both for Integrated Logistics and Spares acquisition costs and Operations and Support (O&S) costs) that they provide a foundation for making adjustments associated with a specific PBL based alternative. Any proposed performance based alternatives MUST then be defined in a manner that

allows clear distinction from the non-PBL approach embodied in the baseline, in ways that may be both quantified and tracked over time to ensure that the required performance objectives are being met. A strictly parametric approach to show reduced costs cannot be supported if it does not link to a specific and executable strategy. Each alternative strategy may have different tradeoffs between the high level objectives identified above. Some platforms, systems, or equipment may eventually reach a level of performance-based maturity wherein the "baseline" for a BCA will be selected performance-based alternative (rather than the default non-performance-based method discussed above). For legacy Subsystem or Component level PBLs the BCA must have one alternative that is considered the baseline, and the other performance-based alternatives should be clearly distinguishable. For new Acquisition Platform Systems that have little to no baseline cost data, the BCA is more a tool to assess Law, Policy, and Best Value to arrive at the optimum support strategy.

#### **E. PBL Enablers**

All key enablers that are necessary to implement the defined PBL strategy must be identified along with the risks associated with not obtaining the necessary approvals. Examples of key enablers include but are not limited to:

1. Improvements based on design enhancements to Reliability, Maintainability, and/or diagnostics procedures
2. Technology Insertion including Open System Architecture, Evolutionary Design (incremental, spiral, P3I, etc.)
3. Requirement for multi-year funding
4. Requirements for cross-appropriation funding
5. Relief from Core requirements
6. Relief from competing service unique requirements (for joint service programs)
7. Proactive Diminishing Manufacturing Sources and Material Shortages (DMSMS) and obsolescence mitigation
8. Incorporation of Core and inter-service requirements. If the PBL strategy includes a proposed prime vendor contract for depot-level maintenance or repair of a weapon system or equipment requiring a Core capability, then there is a statutory requirement that the DoN notify Congress before the award of the contract.)



## **F. PBL Overarching Cost Issues**

The foundation of any cost assessment requires that the material and labor composition of the costs associated with a required product be defined. For any PBL analysis that compares different sources of maintenance and repair the following factors will play a significant role in determining the most cost effective alternative:

1. A requirement of PBL is that support processes must be "transparent" to the Fleet/Force. This means that there usually will be a partnering arrangement between established infrastructure and the PBL provider - whether that consists of an organic or commercial supplier or some combination of both.
2. It is important that the residual cost of the established infrastructure be expressed as a partial "cost recovery rate" and appropriately sized. This is further discussed in paragraph IV.B.2 below.
3. Costs of labor for all options must be understood including the "full burdening" associated with all levels of overhead and profit that can be applied to labor content for each option.
4. In a case where the ultimate supplier is not known it is imperative that rates be applied that represent reasonable forecasts that take into account both the current and projected standards within the industry and region. If the Forward Pricing Agreements for a specific commercial entity are significantly greater than OSD inflation guidance then that must also be factored into the analysis.
5. Performance based alternatives involve both potential awards and incentives for meeting required performance as well as penalties for failure to do so. To the extent that these may be defined, the costs associated with both must be included in the analysis.

PBL initiatives can span a very wide range of potential actions based on both the acquisition time phase and the planned coverage of the PBA. Although the potential variations may be very large there are three basic types of PBL approaches that may be addressed; organic, contractor, or a mix of organic and contractor support. Each option has diverse characteristics requiring significantly different approaches to model both the relevant cost elements and to forecast the resultant outcomes associated with the defined PBL strategy.

Attachment B to reference (b) provides a series of ground rules for PBL BCA cost computations. Requirements are identified to provide costs breakouts in Constant Year Dollars (adjusted for inflation to a base year), Then Year Dollars (Budget execution dollars by year), and Discounted Constant Year Dollars (adjusted for the time value of money). Common concepts or definitions in Attachment B include:

1. Base Year is the year the study occurs

2. Latest indices from OSD per reference (c), except as amended below; exceptions must be annotated in the BCA.
3. Latest discount rates from the Office of Management and Budget (OMB) per Appendix C of reference (d), except as amended below; exceptions must be annotated in the BCA.
4. The BCA must identify budgetable (hard) savings benefits that can be measured, quantified, or placed under control.
5. Any cost avoidance (soft savings) in labor hours or dollars should be addressed as a separate line item.
6. No sunk costs (previously expended) are to be included in calculations or Return on Investment (ROI) analysis.
7. Labor rate costing per reference (e) for military/civilians will be used; except as amended below; exceptions must be annotated in the BCA.
8. A total life cycle cost approach will be used across the relevant life cycle (remaining years of service for the supported item scope being analyzed).
9. All cost elements impacted by the PBL strategy shall be addressed.
10. Non-financial benefits will be considered and explained.
11. Sensitivity Analysis will be included (usually expressed as ROI and/or breakeven analysis).

#### **G. PBL Supportability**

A program's overall design philosophy and acquisition strategy directly influence the ability to maximize the effectiveness of PBL content. Critical factors that impact the ability to meet PBL objectives include:

1. Work share between prime contractors or providers
2. Quantity and quality of vendors for parts
3. Commonality across production lots
4. Evolutionary development strategies

5. Obsolescence management strategies, e.g. Diminishing Manufacturing Sources and Material Shortages (DMSMS)

6. Performance data collection and analysis in support of assessments and reviews

Where practicable, industry solutions for other similar programs that provide efficiencies over the "as is" should be explored and leveraged by new PBAs.

Alternative exit strategies and support plans need to be outlined in case the initially selected providers fail to perform.

## **II. PBL BCA FOR NEW ACQUISITION PROGRAMS**

OSD and DoN policy requires that acquisition programs identify and implement PBL based strategies when it makes good business sense. As stated in reference (f):

"Initial strategies for ACAT I programs will be developed prior to Milestone B, including definition of the metrics that will be used to define a program's ability to meet future logistics and operational performance requirements. These strategies shall provide the foundation for detailed Business Case Analyses (BCA) to be completed prior to Milestone C and/or contract award that are based on the detailed design." Overall PBL implementation and use of PBL BCAs will be assessed as part of the program life cycle assessment process governed by reference (g).

Program managers are responsible for preparing PBL BCAs in support of Acquisition Milestone Decisions beginning with Milestone C per reference (h). Initial structure and cost considerations should begin to be outlined in and as a result of Analyses of Alternatives supporting previous milestones. Design maturation is required to support high confidence in alternative estimates and therefore should not be applied for decision-making until Milestone C. Program managers and associated SYSCOM/Logistics Commands (LOGCOM) are responsible for scheduling the BCA process and program reviews in time to support programmatic milestones.

### **A. Cost Baseline**

A cost baseline for a new acquisition program delineates requirements for Integrated Logistics Support (ILS) and spares acquisition costs as well as the total life cycle O&S costs for the new system. As this program baseline provides the foundation for comparing alternative PBL strategies it must be developed in a manner that has the following characteristics:

1. Identification of ILS costs for each element below a summary level so that adjustments can be made for alternative strategies
2. Identification of requirements that drive ILS and spares cost estimates for any historical programs that are used as a foundation for those estimates

3. Estimation of O&S costs must be sufficiently detailed in areas such as maintenance personnel, repair driven material costs (Depot Level Repairables (DLR) and consumables), and end item heavy maintenance (major depot rework) which have strategies that can be priced out at a sub system level. The estimate must encompass the currently planned operational timeframe for usage of the system.

The program baseline represents the original program of record and must have sufficient quality and fidelity to meet formal documentation requirements established within each naval component.

### **B. PBL Planning**

Logistics Support Planning involves determining the relationship between the PBL strategy and the ongoing design definition and maintenance planning process. Many decisions made during the acquisition process impact every aspect of the desired PBL performance outcomes. For example:

1. Inherent design reliabilities at the repairable item level, definition of repairable versus consumable items, extent and capability of built in diagnostics/prognostics, and detailed maintenance planning all impact Logistics Support Planning.
2. Maintenance planning determines levels of sparing, support equipment, publications, training, depot rework, and other support infrastructure (logistics footprint). As an example, level of repair decisions at the maintenance item level dictate the logistics footprint that will be required.

The PBL BCA does not define approaches or requirements. However, it does help in determining and comparing them. For example, the allocation of depot maintenance workload is dictated significantly by Title 10 statute (sections 2464, 2466) and provides the boundaries of where, how, and by whom the depot maintenance workload will be performed. Weapon system/platform/subsystem specifics (Key Performance Parameters, maintenance concepts, Level of Repair Analysis, Core requirements, reliability, etc.) drive both requirements and potential strategies. The BCA compares the costs and benefits associated with the alternative approaches. The PBL strategy is constructed to satisfy system/platform specific requirements.

### **C. Baseline and Alternative Drivers:**

Another key issue in the new acquisition PBL BCA for both cost and requirements analysis involves determining specific differences in the support strategy and desired outcomes that distinguishes a PBL concept from a legacy concept. It is critical to understand that the investment in the ILS categories of Spares, Support Equipment, Publications, Training, Data Systems, Depot Capability, and other Logistics Management and Engineering infrastructure represents both a very significant investment and a commitment to a specific approach for long-term support of a weapon system.

Although the impact on future costs of operations and maintenance must also be considered, the initial logistics infrastructure impact is a critical part of the PBL analysis. For the future O&S costs care must be taken to distinguish between those items that the government has previously funded as part of the design itself, e.g., requirements for autonomic logistics, significantly better Reliability and Maintainability (R&M), reduced manning levels tied to automation of key tasks, etc. and those that are influenced directly by a PBL concept. At a minimum, baselines and PBL alternatives must address both short term costs and the costs associated with long term usage of a weapon system. A key requirement of any PBL alternative is that it optimizes the system readiness and TOC of the system involved. Each PBL alternative considered should be a viable approach to ensuring that the systems/platforms remain operationally effective and operationally suitable throughout the life cycle, i.e., an alternative needs to be distinctly feasible and include the full costs necessary to make it a completely stand-alone approach.

Specifically any PBL based alternative must at a minimum address "requirements" in ways that can be quantified and be used by cost analysts to determine differences between proposed PBL alternatives and the baseline. Example areas for analysis are provided below.

1. Impacts on requirements for all logistics elements
2. Impacts on maintenance labor "hours" expressed as reduced/increased requirements for scheduled/unscheduled maintenance
3. Changes in manpower composition (source of labor) for both operators and maintainers
4. Changes in maintenance repair requirements that are driven by R&M assumptions
5. Changes in management, ordering, and distribution of repair and consumable parts including impact of labor rates and pass through charges
6. Adjustments to depot rework requirements and sources
7. Alterations in the sustaining infrastructure
8. Changes in potential requirements for sustaining modifications

Note: If there are no definable differences in support methodology then there should not be a definable difference in potential costs.

### **III. PBL BCA FOR FIELDDED SYSTEMS**

Fielded systems require a much different type of analysis. The enabling infrastructure is already in place based upon the program's previously implemented acquisition strategy. Based upon warfighter requirements as well as assessments of the level of repair requirements that are driven by cost, availability, and maintainability concerns there are prescribed maintenance plans for repairable items. Decisions related to unit manning requirements that were based on predicted scheduled and unscheduled maintenance have been previously made. Predicted requirements have driven previous decisions on spares inventory levels, types of support equipment, publications, and training assets. For a major weapon system, billions of dollars may have been expended to develop the support structure required for stable operations. These costs represent "sunk costs" which are not germane for determining an alternative support strategy. Naval Supply Systems Command (NAVSUP)/Naval Inventory Control Point (NAVICP) has an existing process to identify candidate systems that because of quantity, complexity, and cost represent viable candidates for PBL type approaches for maintenance-related cases.

#### **A. Cost Baseline**

For a fielded system, the first step is to determine in as detailed a manner as practicable the current costs of operating and maintaining the current system. This effort involves far more than using top level Visibility and Management of Operating Costs (VAMOSC)-type reporting and should require development of detailed assessments of current costs and the resulting performance that is being achieved. The maintenance system data and cost detail required to develop these estimates should be derived from available maintenance, supply, and detailed cost history data sources. A partial list of sources is provided in Section V, paragraph A.

#### **B. Candidate Selection**

In order to move to a performance based logistics environment a program must first conduct a detailed assessment, not of the symptoms, but of the actual causes that have led to the existing performance level. This analysis involves assessing the key program indicators that are currently being used to measure performance of a support system. The range of potential metrics may be quite broad and should address elements such as labor hours expended, cannibalization rates, actions for which no failure has been found, re-supply rates, reliability, availability, etc. The next step is to determine how an alternative concept may potentially impact those areas that may be improved.

One tool available for use in this area is the NAVSUP Opportunity Index, reference (i) developed by NAVICP Philadelphia to categorize and prioritize weapons systems in order to identify systems with significant supportability challenges. The Index focuses on DLR cost drivers and components with low reliability, obsolescence, and support problems. Additionally, other Fleet/Force input such as that provided by the Top Management Attention/Top Management Item

(TMA/TMI), Troubled Systems Process (TSP), CASREP trends, etc. may be used to identify candidate systems

### **C. Improvement or Change Definition**

The key input to the cost analysis community involves identifying the potential improvements that may be generated by a PBL alternative. The potential improvements must be defined in a way that is capable of being costed-out and that ties-back to legitimate changes that will be caused by the PBL approach. The potential improvements must go beyond simple assertions that a PBL will provide benefit in areas like obsolescence management, R&M, etc. and must identify the specifics of how the changes will be implemented and enforced.

### **D. Baseline and Alternative Drivers**

For a legacy system PBL BCA the key issue both for the cost and the requirements analysis involves determining the differences in both the strategy and desired outcomes that distinguishes the PBL initiative from the currently executed support concept. The areas for improvement analysis should drive the analysis of those changes involved in a PBL based alternative. As with the PBL option for new programs, a key requirement of any PBL alternative is that it optimizes system readiness and TOC of the system involved.

Specifically, any PBL based alternative must, at a minimum, address "requirements" in ways that can be quantified and be used by cost analysts to determine the differences between alternatives. Given the variety of cost and maintenance data available for most legacy systems, the current costs and maintenance system performance should be able to be clearly defined. The key task of the PBL alternative's sponsor is to clearly delineate those changes from current processes that will be costed as a PBL alternative. Based upon the approach taken, the analysis can address one or more of the areas defined below:

1. Impacts of any requirements for new logistics efforts associated with a PBL concept
2. Impacts on maintenance labor "hours" expressed as reduced/increased requirements for scheduled/unscheduled maintenance
3. Changes in manpower composition (source of labor) for both operators and maintainers and the associated changes in costs of that labor driven by comparison of fully defined labor rates
4. Changes in maintenance repair requirements that are driven by R&M assumptions and/or are driven by specific initiatives that have potential to effect change

5. Changes in management, ordering, and distribution of repair and consumable parts including the impact of labor rates and pass through charges (including cost recovery rates)

6. Changes in depot rework requirements and sources

7. Changes in the sustaining infrastructure. This includes requirements for parallel infrastructures if a combination of organic and commercial services is required

8. Changes in potential requirements for sustaining modifications

9. Examples of key legacy system cost "drivers":

- a. Depot repair cycles and costs
- b. Procurement: wholesale and retail operations
- c. Inventory Control Point operations
- d. PBL administration
- e. Fleet/force maintenance manning and associated labor usage
- f. Fleet/force consumable parts
- g. Warehousing
- h. Packaging, Handling, Storage and Transportation
- i. Engineering Analysis and Support
- j. Carcass loss
- k. Depot washout/attrition
- l. Obsolescence
- m. Technical Data
- n. Duty cycle in operational environment

As with new acquisition systems, if there are no definable differences in support methodology then there should not be a definable difference in potential costs.



## IV. COST ESTIMATING STRUCTURE

All cost estimates associated with PBLs must use a consistent cost structure to define both the baseline costs associated with a non-PBL environment and those associated with a PBL approach. Although PBL approaches may be used for organic, commercial, and mixed contractor/organic solutions baselines for comparison will normally be drawn from organic non-PBL data sets that are based on past history. Given the wide variety of potential PBL options ranging from full commercial Contractor Logistics Support (CLS) of an entire weapon system, to repair and inventory management of specific subsystems, the elements identified for costing must be selected based on the defined PBL strategy.

### A. Cost Structure Table

Table A provides a basic cost structure in a format that lists the significant acquisition, acquisition logistics and supply support, and O&S cost elements. This structure is consistent with the Logistics Requirements and Operating and Support structures of references (j) and (k). It provides guidelines for various potential PBL options related to both cost elements that are significant, i.e., the element is critical to program success and must be costed, and those that may be of secondary importance for the specific strategy. Even elements of secondary importance should be costed-out if they represent a potential contractual cost. Elements without a symbol are not considered to be relevant for the option chosen. When modeling alternative sustaining engineering life cycle costs analysis effort should be focused on the cost elements and logistics factors that influence and account for the largest impact on readiness and will influence the success of the proposed alternative on measurable performance outcomes. Such costs may include Distance Support; Technical Assistance site visits; configuration validation efforts; updating of DMSMS plans and actions; Reliability, Maintainability, Supportability (RMS) analyses; Commodity Management; End-of-Life and disposal actions; etc.

It is vital that cost analysts developing a PBL BCA fully understand the scope of what is being supported and which elements of ILS and O&S are being addressed in the baseline and each alternative. To assist in this effort, the checklist provided in Table A should be used. This cost structure identifies the scope of support as System, Sub-System, or Component level per reference (a), and provides a support cost matrix with ILS and O&S elements on one axis and the strategy for support on the other. The level of detail should be tailored to the point where all significant support costs are identified. This way the program manager and cost analyst may determine which costs relate to the traditional baseline methods, PBL-Organic, PBL-Contractor, or PBL Partnership alternatives. The completed checklists results in the minimum set of cost elements, which must be included in the BCA.

**TABLE A - Cost Structure for Performance Based Logistics Business Case Analyses**

<input checked="" type="checkbox"/> Significant Element	Baseline Organic Repair New System	New Program Total CLS incl "O" Level	Baseline Organic Repair Legacy System	Legacy Program Total CLS incl "O" Level	New Program CLS excl "O" Level	Legacy Program CLS excl "O" Level	Subsystem Ctr "T" Lvl, Repair, Inventory Mgt	Subsystem Ctr Repair, Inventory Mgt
<input checked="" type="checkbox"/> Support Element								
Acquisition Cost:								
Nonrecurring Design	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			
Production	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			
Acquisition Logistics Support Cost:								
Maintenance Planning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Support Support (Spares)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Support Equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Technical Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Training	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Facilities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Packaging, Handling, Storage & Trans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Operations and Support Cost:								
"O" Level Maintenance Personnel								
Military Labor	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
Contractor Labor		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
"I" Level Maintenance Personnel								
Military Labor	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
Contractor Labor		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Depot Level Repairables (DLRs)								
Costs of Repair	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Supply System Cost Recovery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Burdening (Trans, Washout, Obs)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Consumables/Repair Parts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Weapon System Rework								
Organic Repair	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
Commercial repair		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Engine Depot Rework								
Organic Repair	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
Commercial repair		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Sustaining Engineering								
Government								
Technical Assistance Visits	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Distance Support	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disposal Actions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Contractor								
RMS Analysis	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DIMSMS Actions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Software Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Recurring Training	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Support Equipment Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Modifications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

## B. Key Issues

Several key issues must be addressed in the cost structure that relate to costs that may be misunderstood and/or misapplied in PBL analyses.

1. Respective share of technical and oversight responsibility between government and contractor teams under commercial PBLs. There are usually certain key areas such as air-worthiness certification, safety, and configuration management that are still vested in the government. Therefore, government sustaining engineering/program management should normally not be expected to disappear under commercial PBLs.

2. Treatment of organic supply system "surcharges." Composition of the supply system surcharge is often misunderstood and misapplied in cost studies comparing commercial versus organic support. NAVSUP does provide a tiering system for PBLs wherein items requiring less supply system support do have a lesser-cost recovery rate. What is often misunderstood is that the "surcharge" has two significant components:

- a. The Cost Recovery Rate (CRR) only includes elements of cost required to support the wholesale supply system such as Material Maintenance, Supply Operations, Logistics Engineering Change Proposal (LECP) management, Taxes, etc. When a lower rate is applied for a commercial PBL this only impacts the cost recovery portion of the additional charge applied to the price of repair. The CRR is applied to recover costs associated with the investment required to bring material into the Integrated Supply System (ISS). The CRR covers the costs of material maintenance; supply operations at NAVICP/Fleet Industrial Supply Centers (FISC) such as allowance lists, resolution of non-routine problems, expediting, and other inventory management functions; Defense Logistics Agency (DLA) depots; Defense Logistics Information Service (DLIS); and Demilitarization (DEMIL) costs; etc.

- b. A tailored burdening rate is also applied to components managed with Navy Working Capital Fund (NWCF) to cover costs of repair management, preservation and packaging, transportation, First Article Testing, and other incurred costs. These rates are applied to recoup revolving NWCF costs and customer prices are balanced to the Fleet operating account, i.e., the Flying Hour Program (FHP) budget. The burdening factor covers other types of costs that will transition to an alternative source of supply. The most significant elements of this factor include transportation, depot washout (where a returned item cannot be repaired), and obsolescence costs. These types of costs must be addressed in any contractor PBL option.

- c. The CRR and burdening rates are payment for products provided and services rendered. Any support strategy that assumes support from outside of the ISS will incur the costs associated with developing and establishing a separate

supply chain infrastructure. Use of NWCF/CRR allows the PBL provider responsible for platform support to be completely integrated with the existing supply system.

d. Three pricing tiers apply to the CRR. The highest level, Tier 3, applies to items requiring in-depth micro-management and special management attention. The middle level, Tier 2, applies to the typical NAVICP-managed item of supply. The lowest level, Tier 1, applies to those items requiring the least amount of management attention. Tier 1 CRR is most commonly applied to items covered by PBL. Tier 1 rates are applied because the PBL provider has assumed some, but not all, of the responsibilities of the supply chain in accordance with the terms and conditions outlined in the contract Statement of Work (SOW). Burdening rates under PBL are also tailored to match the level of contractor responsibility.

3. Understanding and quantifying PBL Contractor Risk. Estimates of a system's future maintenance and support costs are sometimes dependent upon a relatively small number of key technical assumptions that may, or may not, prove to be completely accurate. This is particularly true of new systems. However, it is also true to more mature systems though normally to a lesser degree. Small variations in these key assumptions may result in significant differences in the cost estimates.

Contractors are aware of the potential effect of this cost estimating risk, and will normally attempt to mitigate the risks, especially in fixed price type contracts. One way to mitigate cost risk is to influence the key technical assumptions being used in the cost estimates. For example, adopting a pessimistic position for predicted reliability for the baseline "As Is" scenario and only a somewhat pessimistic position concerning predicted reliability within the PBL "To Be" scenario, the predicted costs for both options will be high. However, the PBL option will appear to be the more attractive. Thereby, if awarded a contract based on pessimistic reliability assumptions, the monetary cushion needed to mitigate cost risk is available to the PBL supplier. Another method that a PBL supplier may pursue to mitigate cost estimating risk is to simply increase the contract profit rate being requested to higher than the historic level and attempt to justify the request by explaining the additional cost risks entailed within a PBL contract.

The above business practice is in stark contrast to the manner in which the government operates. The government essentially accepts cost risk for free. In other words, the government does not normally budget for unknown unknowns. Budgets are usually based on point estimates, rather than cost ranges that could account for cost risk.

The PBL supplier may very well be justified in attempting to mitigate their cost risk within any PBL contract. However, it is the responsibility of the analyst performing the BCA to coordinate with the appropriate technical experts and the program office to ensure that the best available and most accurate data and assumptions are used for all options within the BCA.

## V. PBL BCA DATA

### A. PBL Data Sources, Rates and Factors

A PBL BCA may address a multitude of different approaches that require data, rates, and factors that are tailored to the specific commodity and approach being identified. The data required to analyze different product support strategies is often vast and varied. The information below provides potential sources for the cost and other data necessary to conduct a product support BCA. The list is not all inclusive and other sources should be considered as appropriate. Also, some of the sources listed may not be relevant to every BCA.

#### 1. Organizations:

a. Government agencies including: Program Offices, SYSCOMS, LOGCOMs, appropriate technical authorities, In-Service Engineering Activities (ISEA), Naval Warfare Centers, Depots, Defense Contract Management Agency (DCMA), Defense Contract Audit Agency (DCAA), and the DLA (including the DLA's field activities).

b. Original equipment manufacturers (OEM)

#### 2. Rate information sources:

a. Comptroller Composite Rates for Civilian and Military Labor, reference (e) refers. <http://www.dod.mil/comptroller/rates/>

b. Inflation factors from Naval Center for Cost Analysis (NCCA) website, reference (I) refers. <http://www.ncca.navy.mil/services/inflation.cfm>

c. Discount rates from OMB Circular A-94, reference (d) refers. <http://www.whitehouse.gov/omb/circulars/a094/a094.html>

#### 3. Requirements, planning, and technical documents:

a. Manning Documents

b. Work Unit Code Manuals

c. Technical Manuals

d. Weapon System Planning Document (WSPD)

e. Navy Training Plan (NTP) / Navy Training Systems Plan (NTSP)

- f. OP-20 Budget Analysis Report
  - g. Maintenance Requirement Card (MRC)
  - h. Maintenance Index Pages (MIP)
  - i. Logistics Requirements and Funding Summary (LRFS) and Facilities Plan
  - j. NAVICP Demand History Files
  - k. Program Capabilities Development Document/Capabilities Production Document (CDD/CPD)
4. Operations, maintenance and logistics data sources:
- a. VAMOSC <http://www.navyvamosc.com/>
  - b. Naval Aviation Logistics Data Analysis (NALDA)  
<http://logistics.navair.navy.mil/>
  - c. Federal Logistics Database (FEDLOG)  
<http://www.dlis.dla.mil/fedlog/default.asp>
  - d. U.S. Federal Supply Catalog (access through HAYSTACK)  
<http://govsupport.partslogistics.com/>
  - e. WebLINK (Logistics Information Network)  
<http://www.dlis.dla.mil/link.asp>
  - f. Open Architecture Retrieval System (OARS) for 3M data  
<http://www.oars.navsea.navy.mil/index.htm>
  - g. Configuration Data Manager's Database-Open Architecture (CDMD-OA) <http://www.cdmd.navy.mil/>
  - h. Automated Support Equipment Recommendation Data (AUTOSERD)  
<http://logistics.navair.navy.mil/autoserd/index.cfm>
  - i. Support Equipment Resources Management Information System (SERMIS) <http://logistics.navair.navy.mil/sermis/index.cfm>



## **B. Additional Inflation Guidance**

A critical component of PBL Business Case Analyses is to ensure that credible and defensible out-year projections are made for the costs for any alternative being assessed. Because PBL arrangements are planned to exist over an extended period, it is critical that reasonable and accurate assessments of future cost growth be developed for each element of cost. This is a significant requirement and misinterpreting the potential for cost growth under the various alternatives may represent a serious estimating risk.

1. Budgetary Inflation Guidance. The NCCA maintains official Department of Navy Inflation Guidance for future planning. The NCCA website provides current and historical inflation factors linked to various categories of cost tied to appropriation categories. The current database tables are found at

<http://www.ncca.navy.mil/services/inflation.cfm> - reference (c). As a general rule, standard policy is to use Operations and Maintenance (O&M) O&M/LF Composite – (Less Fuel) rates for depot level repairables; including O&M (Purchases) for consumable/repair items and O&M (Purchases) for CLS types of contracts.

2. Issues with Appropriation Inflation Guidance. For some of the data elements that are critical to PBL analyses the appropriation based official guidance may not always be adequate. As an example, while there are specific forecasted rates for military labor (MP Composite for Navy and Marine Corps personnel) and for civilian personnel (CivPay for Civilian Pay) there are no specified rates for contractor labor. Using general appropriation guidance such as O&M (Purchases) to project increases for CLS labor may significantly understate the future cost of contract labor. In other areas such as DLRs and Consumables procured through the DLA the current rates of increase may be dramatically higher than the official appropriation guidance.

3. Recommended Sources for Inflation Projections. Under these circumstances, for individual PBLs, it is imperative that the best available information be used to develop future rate increases - especially those for labor and critical material categories. The appropriate SYSCOM/LOGCOM cost organization and the NCCA can provide additional information and/or recommendations regarding the use of tailored inflation projections for cost elements within the PBL BCA. For many commercial firms, existing Forward Price Rate Agreements (FPRAs) represent the recommended/required source to establish the current fully burdened labor rates and also to determine the negotiated rates of increase during the term of the currently negotiated agreement. For both labor and non-labor items, services such as Global Insight Economic Forecasts represent a well-documented source of future inflation projections that are linked to specific commodities and labor categories. For example, Global Insight (DRI) provides detailed projections that are classified by Average Hourly Earnings (AHE), the Consumer Price Index (CPI), Employment Cost Indexes (ECI), and the Producer Price Index (PPI). These indices may be used to develop a tailored inflation projection that is commodity and industry specific.

It is imperative that best available information be used to develop inflation projections for each PBL alternative.

### **C. PBL Performance Data Reporting**

A key requirement for PBL initiatives is that the DoN retains insight into both cost and performance metrics. The Government Performance and Results Act and the Acquisition Streamlining Act require those metrics. Generally, for organically supported items the Services have relatively detailed maintenance and cost reporting that may be used to assess the total ownership cost, as well as the significant maintenance and logistics cost drivers that drive requirements for both weapon systems and their associated subsystems. Under a PBL construct, whether it is conducted through external contractors, organic suppliers, or a mixture of both it is imperative that the visibility into cost and performance be maintained. Retaining access to this data is critical both for future planning and to support the development of an acceptable exit strategy. At a minimum, there are two types of reporting that must be maintained with specific requirements levied on contractors and/or organic suppliers. These requirements include:

1. Top Level Cost Reporting. For top level cost reporting, all PBLs at a total platform level are required to report into the Navy VAMOSC reporting system. Details of this reporting should be consistent with the reporting cost structure maintained by NCCA within each Component's cost reporting system. Guidance and examples for each VAMOSC O&S Cost reporting system may be found in reference (1). At a minimum, any CLS PBL effort shall provide at least the minimum elements specified below into the total cost reporting system:

- a. Maintenance Labor Cost (Equivalent "O" and "I" level)
- b. DLR Cost
- c. Consumable and Repair Parts Cost
- d. Weapon System/End Item Rework Cost
- e. Engine Rework Cost
- f. Contractor/Government Systems Engineering/Program Management Cost
- g. Contractor/Government Technical Representative Cost

2. Detailed Maintenance/Supply Reporting. Under any PBL it is critical that the DoN maintains/retains the critical information that describes both the performance and the cost of weapons systems at the subsystem and major component levels. This data provides the basis for future Cost Analysis and Logistics Systems Analysis on new



Weapons Systems as well as providing insight into the current critical maintenance and supply issues. The data is also used to ensure that performance is meeting the specified requirements while maintaining the overall health of the weapons system or subsystem maintained under a PBL environment. The specifics of this reporting need to be defined as part of the Performance Work Statement (PWS), Statement of Work (SOW), and specific reporting requirements associated with any PBL activity. Examples of logistics performance measures for use in PBAs are provided in Enclosure (3) to reference (m). For currently supported organic systems, the DoN maintains detailed reporting that is provided from daily maintenance and supply records. At a minimum, under a PBL this type of reporting must be maintained, available in a compiled form on a monthly basis, and provided in a format and structure compatible with the established maintenance reporting that exists within each SYSCOM. A sample listing of the types of information required is provided below. The list is not all inclusive and may be tailored; however, the overall intent to maintain consistent and well documented data that describes the cost and maintenance/supply system performance of the systems/subsystems must be protected. Other/additional performance-based support cost reporting elements may be required for specific PBAs as deemed necessary by the program manager to sustain the visibility of relevant life cycle support costs.

- a. Bureau Number/Identification Number of End Item
- b. Serial Number - Engine and Other Serialized Parts
- c. CAGE Code
- d. COG Code
- e. NIIN
- f. Part Number
- g. Malfunction Code (O-Level and I-Level)
- h. When Discovered Code (O-Level)
- i. Type of Maintenance Code (Scheduled / Unscheduled)
- j. Type of Maintenance Description
- k. Beyond Capability of Maintenance (BCM) Count
- l. Depot Level Repairable Cost
- m. O-level Consumable Cost

- n. I-level Consumable Cost
- o. Total Consumable Cost
- p. O-level Cannibalization Count
- q. I-level Cannibalization Count
- r. O-level Failure Count
- s. I-level Failure Count
- t. O-level Removal and Replacement Count
- u. I-level Removal and Replacement Count
- v. No Defect Removal Count and OEM No Defect at the commercial site
- w. Y-Code (Received Bad from supply)
- x. Awaiting Parts (AWP)/Average Customer Wait Time (ACWT) –  
Date Ordered to Date Received - depending if the PBL has a  
deliverable obligation
- y. Unique Identifier (UID) Costs

## VI. BCA DOCUMENTATION FORMATS AND TOOLS

Completion of a BCA Cost Estimate and its associated documentation in a consistent and repeatable format is required. The SYSCOMs/LOGCOMs may prescribe their own tools and formats which should be organized to meet the intent of the minimum or comprehensive requirements contained in reference (b) and this guide, and tailored as necessary. Existing tools such as the NAVAIR BCA Template, reference (n) may be used as appropriate.

Using the information provided in Sections II through V above, a clearly documented and auditable process will be developed tracing assumptions from the current logistic support system costs to those associated with the proposed changes in the PBL logistics support processes.

Equipment modifications, technology insertion, obsolescence solutions, and support process improvements may result in decreases in the required labor resource differences between Contractor and Organic activities associated with specific PBL alternatives.

Cost savings/avoidances in each cost category used in the baseline must be quantified, including the reduction of labor content and hours expressed as dollars resulting from proposed PBLs.

**Documentation Requirements** - Documentation for proposed PBL alternatives submitted shall include a cover page and narrative pages that accurately describe the application of the proposed PBL initiatives and shall provide sufficient information to support evaluation.

**Narrative** - This section outlines the necessary information that must be addressed and/or provided for each submission, including the formatted cover page. The sections that should be addressed within the narrative include:

#### **A. Overview**

**Cost Summary** - Identification of the sponsoring organization and summary cost information.

**Narrative Description of the PBL Initiative** - Provide an overview description of the PBL alternative(s) explaining the need for the support initiative, e.g., increasing logistic support cost growth, readiness degradation, equipment cost driver (reliability, support cost, or obsolescence factors etc.) as well as how the PBL initiative will result in cost savings/avoidances and the results that will be achieved.

**Description of where the PBL will be performed** - Identify the locations, sites, and facilities that will be executing the initiative, i.e., receiving the investment funds and implementing the PBL. This must clearly identify those portions of the investment that will be contracted out such as the engineering sustainment, hardware redesign, software maintenance, and/or CLS).

**PBL Plan of Action and Milestones (POA&M) Timeline** - Provide a schedule overview of the PBL's POA&M. Include the steps required for execution of the investments and the major tasks and milestones in the development and execution phases, as well as the PBL implementation. Schedule realism must consider funding realities and execution schedules and include realistic timing for logistic support planning, implementation, and related sustainment tasks to improve support posture over the period of the PBL contract.

#### **B. Cost Methodology**

**Assumptions** - All of the critical assumptions that drive the results of PBL alternatives must be documented. The linkage between critical costs and assumptions must demonstrate that the assumptions are reasonable and credible. Any related assumptions regarding the planned execution schedule should also be included.

**Basis for Investment(s) estimates:**

1. Identify the type of investment funding required.

2. Status of funding appropriation required.
  - a. Identify funding that has already been provided.
  - b. Identify potential sources for funding that has not been provided.
  - c. Identify the current status. Have these potential funding sources been approached, e.g., is there a current LECP application?
3. Identify tasks by year
4. Provide the rationale used to develop investment costs by appropriation and by year, i.e., explain how the investment cost estimate(s) were developed.
  - a. If a contractor quote is used identify the contractor, the year in which the contractor gave the quote, the quantity (if applicable) for which the quote was given, the number of work hours that will be provided for the quoted amount, and the time frame for which the contractor will honor the quote.
  - b. If an estimate was developed provide documentation for the cost data used to develop investment costs, e.g., provide sources of data used to determine the number of hours required by task by year, identify the sources for labor rates used, identify the quantity and type of material required, and identify the sources for the material costs.
5. Presentation of Results - Results projecting requirements into the future will be documents as required 'Investments'.

The PBL BCA process will document the cost impact over time for PBL Cost Elements projected for the BASELINE (AS-IS), required Non-Recurring Investments, and TO-BE estimates costs from which Cost Saving/Cost Avoidances are calculated.

**C. 'As-Is (Support Baseline)'** (Costs if a PBL alternative is not implemented) - The following information should be provided to document the current baseline:

1. Identify Cost Elements - Identify the specific cost elements that would be Affected, i.e., increased or decreased, if the PBL Alternative were not implemented.
2. Methodology - Explain how yearly 'As-Is' costs, i.e., current costs without implementation of the PBL alternative, were estimated for each of the cost elements. The timeframe evaluated must extend throughout the projected life of the program. Show any models or equations used. Identify any analogous systems used. As-Is Costs must be realistic.

3. Data Sources - Document the cost data used to develop the 'As-Is' or current support costs, i.e., provide sources of data used to determine the number of labor hours required by cost element (by year), identify the sources for labor rates used, identify the quantity and type of material required, and identify the sources for the material costs. Sources may include, but are not limited to maintenance and supply databases including VAMOSC, organic/depot price history, contractor proposal data, contractor actual data from similar programs, and/or contract quotes. Explain any adjustments made to tailor the data sources to the PBL options being considered.

4. Inflation Adjustments - Identify source years of data and inflate to the desired base year for NPV calculations using approaches recommended in Section V Additional Inflation Guidance, above.

5. Usage and Maintenance Requirements - Identify any critical usage and maintenance related requirements and/or anomalies that will occur during the 'As Is' Baseline Data Years and explain how they were accounted for in the baseline. For example, Chief of Naval Operations (CNO) aircraft/ship quantity profiles and programmed aircraft flight hours and steaming hours.

6. Presentation of Results - Results projecting effects into the future will be reflected in the 'As-Is (Baseline)' worksheet. These are the costs that would be incurred if the alternative were not implemented.

**D. 'To-Be' Expected Cost Projection** (Costs if PBL alternative is implemented) - The following information should be provided to describe and document each 'To-Be' cost estimate. The timeframe evaluated must be the same as that defined for the 'As-Is' projection. To-Be Expected costs DO NOT INCLUDE the one-time investment costs.

1. Identify Cost Elements - Identify the cost elements that would be affected (increased or decreased) if this alternative were implemented.

2. Methodology - Explain how the 'To-Be' costs by year for each of these cost elements were estimated. Show any models or equations used. Show any analogous system used.

3. Data Sources - Provide documentation for the cost data used to develop the 'To-Be' costs, e.g., provide sources of data used to determine the number of labor hours required by cost element (by year), identify the sources for the labor rates used, identify the quantity and type of material required, and identify the sources for the material costs. Sources may include, but are not limited to maintenance and supply databases including VAMOSC, organic/depot, contractor proposal, contractor actual data, and/or quotes from similar programs.

4. **Cost Drivers** - Identify the cost information that drove the alternative results and the basis for those projected costs, e.g., Technology Insertion impact, R&M improvements, application of Reliability Centered Maintenance logic, obsolescence redesign, reduced repair costs by changing repair source or philosophy, implementation of autonomic logistics, and improved maintenance health monitoring and diagnostics etc. Be specific when describing cost drivers. If the objective of an initiative is to reduce an item's Mean Time Between Failure (MTBF) and associated Direct Maintenance Man Hours, DLR, Consumable and spares costs, then each of those costs should be addressed. Describe how each cost element is related to the primary alternative objective, e.g., increasing the MTBF from current 300 to future 1000.

5. **Presentation of Results** - Results projecting effects into the future will be documented on a 'To-Be' worksheet or numeric display. These are the costs that would be incurred if the proposed alternative were to be implemented.

**E. Cost Avoidance** - Calculations and results are required for the proposed alternative's anticipated Cost Savings/Avoidances based on differences between 'As-Is' Costs and 'To-Be' plus 'Investment' Costs. Results are displayed as PBL BCA 'Summary' and 'Breakeven'.

**F. Tracking Results** - A key aspect of implementing any alternative is the ability to track results of the initiative over time - expressed as cost avoidances achieved (compared to projected avoidances). In order to enable tracking of the alternative selected, the program team must explicitly define the database and detailed information that will be used to track results. If at all possible, that database should be consistent with the source(s) used to develop the alternative.

1. **Methodology for Tracking Results** - Describe the specific process and the data sources to be used to measure the results of the PBL if it is approved and executed. This paragraph must be closely linked to the description of Cost Drivers addressed previously. Describe how the alternative PBL provider will prove that the initiative was successful in achieving the projected ROI throughout the course of the PBL Contract.

2. **Description of Ability to Execute in Various Fiscal Years** - The program team must document how they plan to execute investment funding prior to the expiration of funds, e.g., will place funds on contract in third quarter, etc. Execution must be consistent with the PBL Schedule.

3. **Expectation Rationale** - When applicable, indicate execution risk for the alternative and any negative impact on PBL cost effectiveness if funding is delayed.

## VII. REFERENCES AND ADDITIONAL INFORMATION

### References:

- a. ASN (RDA) memo: DEPARTMENT OF THE NAVY PERFORMANCE BASED LOGISTICS (PBL) IMPLEMENTATION PLAN, 26 Apr 2002
- b. ASN (RDA) memo, PERFORMANCE BASED LOGISTICS (PBL) GUIDANCE DOCUMENT, 27 Jan 2003
- c. Naval Center for Cost Analysis (NCCA) Web Site: <http://www.ncca.navy.mil>
- d. OMB Website: <http://whitehouse.gov/omb/circulars/a094/a094.html>
- e. DOD Comptroller Website: <http://www.dod.mil/comptroller/rates/>
- f. USD (AT&L) Memorandum, PEL BCA, 23 Jan 2004
- g. SECNAVINST 4105.1 Series, Independent Logistics Assessment (ILA) and Certification Requirements
- h. USD (AT&L) Performance-Based Logistics Product Support Guide, 10 Nov 2004  
<https://acc.dau.mil/CommunityBrowser.aspx?id=32536>
- i. NAVICP PBL Opportunity Index, 17 Dec 2002:  
[https://www.navsup.navy.mil/portal/page?\\_pageid=477,1090559,477\\_1090560&\\_dad=p5star&\\_schema=P5STAR](https://www.navsup.navy.mil/portal/page?_pageid=477,1090559,477_1090560&_dad=p5star&_schema=P5STAR)
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**Additional Information Points of Contact:**

DoN:	DASN(A&LM)	(703) 697-4063
HQMC:	DC, I&L	(703) 695-8947
MARCORSYSCOM:	MCSC ACLCL	(703) 432-3813
NAVSEASYSYSCOM:	NAVSEA 04L	(202) 781-4474
NAVAIRSYSCOM:	NAVAIR 4.2.1	(301) 342-0180
SPAWARSYSCOM:	SPAWAR 4.4	(858) 537-0521
NAVSUPSYSCOM:	NAVICP 0361	(215) 697-5740
DAU:	Logistics & Sustainment Center	(703) 805-4949